

The Honorable Robert S. Lasnik

UNITED STATES DISTRICT COURT  
WESTERN DISTRICT OF WASHINGTON  
AT SEATTLE

BIOMEDINO, LLC,

Plaintiff,

v.

WATERS CORPORATION, GENERAL  
ELECTRIC COMPANY, d/b/a GE  
HEALTHCARE, and AGILENT  
TECHNOLOGIES, INCORPORATED,

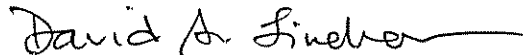
Defendants.

No. CV05-0042L

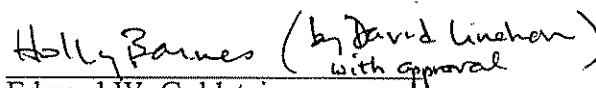
**PRAECIPE TO JOINT MOTION  
AND [PROPOSED] ORDER  
APPOINTING PROFESSOR  
EMERITUS KENNETH WALSH AS  
TECHNICAL ADVISOR TO THE  
COURT**

Attached hereto is Exhibit A to the parties' Joint Motion And [Proposed] Order  
Appointing Professor Emeritus Kenneth Walsh As Technical Advisor To The Court. This  
exhibit is the curriculum vitae of Professor Walsh, which was inadvertently omitted from the  
original electronic filing dated May 20, 2005.

Respectfully presented by:



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 (by David Linehan  
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PRAECIPE TO JOINT MOTION AND [PROPOSED]  
ORDER APPOINTING TECHNICAL ADVISOR - 1  
(CV05-0042L)

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***Biomedino, LLC v. Waters Corp., et al*, Case  
No. CV05-0042L**

**EXHIBIT A**

**TO JOINT MOTION AND [PROPOSED] ORDER APPOINTING  
PROFESSOR EMERITUS KENNETH WALSH AS TECHNICAL  
ADVISOR TO THE COURT**

CURRICULUM VITAE

**Kenneth A. Walsh**

Emeritus Professor of Biochemistry  
Department of Biochemistry, (Box 35-7350)  
University of Washington  
Seattle, Washington 98195  
Telephone: (206) 522-2748  
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**Consulting (Home) Address:** 4550 - 51 Ave NE, Seattle WA 98105

**PERSONAL DATA**

Born: August 7, 1931, Sherbrooke, Quebec, Canada  
(U.S. Immigrant, 1958; Naturalized September 1977)  
Married: with three children

**EDUCATION**

1947 - 1951 McGill University, Montreal, B.Sc.(Agr.), 1951  
1951 - 1953 Purdue University, W. Lafayette, IN, M.S.(Biochemistry), 1953  
1955 - 1959 University of Toronto, Ph.D. (Biochemistry), 1959

**POSITIONS HELD**

1959 - 1962 Research Instructor, Dept. Biochemistry, Univ.  
Washington, Seattle, WA  
1962 - 1965 Assistant Professor of Biochemistry, Univ. Washington  
1965 - 1969 Associate Professor of Biochemistry, Univ. Washington  
1969 - 2000 Professor of Biochemistry, University Washington  
1990 - 1992 Acting Chair of Biochemistry, University Washington  
1992 - 2000 Chair of Biochemistry, University of Washington  
2000 - Emeritus Professor of Biochemistry, Univ. Washington

**NON-ACADEMIC**

1953 - 1955 Natl. Research Council of Canada, Ottawa; Jr. Research Officer

**MEMBERSHIP IN PROFESSIONAL SOCIETIES**

American Society of Biochemists & Molecular Biologists, 1967-  
The Protein Society, 1986-1997  
The Protein Society, Secretary/treasurer 1987-1990  
Association of Biomedical Resource Facilities, 1992-2000  
American Assn. Adv. Science, 1997-

**SERVICE ON ADVISORY COMMITTEES**

August, 1969 NIH (NIAMD) Program Project site visit (Portland)  
1975-1978 Member, Scientific Review Committee, Center for Research  
in Oral Biology (NIDR), Univ. Washington, (Seattle)  
February, 1976 NHLI Consultant at Workshop on Proteases and  
Anti-proteases in Lung Disease (Airlie, Virginia)  
February, 1977 NHLI Program Project site visit (Philadelphia)  
June, 1977 NIH Study Section on Physiological Chem. (Washington, DC)  
February, 1978 NHLBI Project site visit (Chicago)  
June, 1978 NHLBI Project site visit (Chicago)  
1978-1982 NIH Study Section on Physiological Chem. (Washington, DC)  
1980-1982 Chairman, Physiological Chemistry Study Section, NIH  
August, 1981 Special study section site visit, DRG (Pasadena)

April, 1983	NIH BRS, special study section (San Diego)
July, 1983	Study section site visit (San Francisco)
August, 1983	NIH BRS, special study section (Seattle)
October, 1983	American Heart Association review group (Orcas Island)
1984-1986	Chairman, Scientific Program Comm., 6th Int'l Conf. on Methods in Protein Sequence Analysis (Seattle)
1985-2000	Nat'l Advisory Comm. for Mass Spect. Facility (U.C.S.F.)
June, 1985	Physiological Chemistry Study Section (Washington, DC )
June, 1985	Member, Advisory Committee, the Protein Society
1986-88	Member, Committee to review Dept. Chemistry (Univ. Wash.)
1987-1994	Member, Advisory Committee on Protein Identification Resource (Washington, DC)
June, 1987	NIH BRS, special study section (San Diego)
1987-1990	Secretary/treasurer, The Protein Society
March, 1988	MRC, Project site visit (Montreal)
August 1988	Symposium Director, The Protein Society, (San Diego)
July 1989	Local Organizer, Protein Society Symposium (Seattle)
1990-2000	Member, Executive Comm., Med. Schl., Univ. Washington
1989-1990	Member, Committee to review Dept Pharmacology
1991-1994	Member, Medical School Council on Academic Affairs
Febr. 1991	Special Study Section Site Visit (Palo Alto)
1992	Member, Search Comm. For Chair of Pathology
1993-95	Member Med. Schl. Appointments & Promotions Comm.
1994-1997	Member, Committee on Issues of Women Faculty
1994	Chair, Search Comm. for Chair of Comparative Medicine
1995	Member, Comm. to Review Chair of Physiology/Biophysics
1995-1997	Chair, Med. Schl. Appointments & Promotions Council
1996-1997	Member, Search Comm. for Chair of Bioengineering
Nov., 1997	Advisory Comm. Pacific NW Natl. Lab., Richland, WA
1997-98	Member Comm. to review Med. Schl. Research Training Program
July, 1998	NIH, Site review (P41), Bethesda
1998	Co-Chair, Search Comm. for Chair of Biomedical
History/Ethics	
1998-1999	Member, Med. Schl. Curriculum Review Committee
July, 1999	NIH Review of Shared Instrumentation Grants, Rockville
Nov., 2000	NIH Review of Shared Instrumentation Grants, Bethesda

#### Consultant Activities

1985-1987	Consultant, Amgen Corp., Thousand Oaks, CA
1988-2000	Consultant, Zymogenetics Corp., Seattle, WA
1990-1991	Research Advisory Board, Rainier Medical Imaging Ctr., Bellevue, WA
1991-1995	Scientific Advisory Brd., Cytran inc., Kirkland, WA
1994-1996	Consultant, Bainbridge Sciences Inc., Redmond, WA
1994-1996	Consultant, Finnegan, Henderson, et al, Washington, DC
1995-2001	Scient. Advisory Brd, Biomolecular Technologies, Inc., Palo Alto, CA
2003	Expert Witness, Greenberg/Traurig LLP, New York, NY
2004	Consultant, Browdy/Neimark PLLC, Washington DC

#### Honors

1987	First elected Secr./Treas. Of the Protein Society
1993-2000	Appointed Davie/Zymogenetics Chair, Medical Schl. Univ. Washington
1997	Blandau Award, Outstanding teacher, 1 <sup>st</sup> yr. Med students
2000	Blandau Award, Outstanding teacher, 1 <sup>st</sup> yr. Med students
2000	Granted Emeritus status by the University of Washington
2002	Received Pehr Edman Award from MPSA in Valencia, Spain

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PUBLICATIONS

1. K. A. Walsh and S. M. Hauge. Carotene: Factors Affecting Destruction in Alfalfa. J. Agricultural and Food Chem. 1, 1001 (1953).
2. K. A. Walsh and D. Rose. Factors Affecting the Oxidation of Nitric Oxide Myoglobin. J. Agricultural and Food Chem. 4, 332 (1956).
3. J. R. Brown, D. J. Cox, R. M. Greenshields, K. A. Walsh, M. Yamasaki and H. Neurath. The Chemical Structure and Enzymatic Functions of Bovine Procarboxypeptidase A. Proc. Natl. Acad. Sci. USA 47 No. 10, 1554 (1961).
4. K. A. Walsh and J. R. Brown. Internal Standards for Amino Acid Analyses. Biochim. Biophys. Acta 58, 596 (1962).
5. K. A. Walsh, K. S. V. Sampath Kumar, J.-P. Bargetzi and H. Neurath. Approaches to the Selective Chemical Labeling of the Active Site of Carboxypeptidase A. Proc. Natl. Acad. Sci. USA 48, 1443 (1962).
6. K. A. Walsh, D. Kauffman and H. Neurath. The Amino Terminal Sequence of Trypsinogen. Biochemistry 1, 893 (1962).
7. K. A. Walsh, D. L. Kauffman and H. Neurath. Peptides Isolated from Tryptic and Chymotryptic Hydrolysates of S-Sulfo-Trypsinogen. Biochim. Biophys. Acta 65, 540 (1962).
8. K. S. V. Sampath Kumar, K. A. Walsh, J.-P. Bargetzi and H. Neurath. Identification and Sequence of Amino Acid Residues Around the Thiol of the Active Site of Carboxypeptidase A. In "Aspects of Protein Structure," pp. 319-335, ed. by G. M. Ramachandran, Academic Press, London (1963).
9. J.-P. Bargetzi, K. A. Walsh, D. J. Cox, K. S. V. Sampath Kumar and H. Neurath. Amino Acid Composition of Bovine Carboxypeptidase A. Biochemistry 2, 1468 (1963).
10. D. J. Cox, F. C. Bovard, J.-P. Bargetzi, K. A. Walsh and H. Neurath. Procedures for the Isolation of Crystalline Bovine Pancreatic Carboxypeptidase A. II. Isolation of Carboxypeptides A<sub>alpha</sub> from Procarboxypeptidase A. Biochemistry 3, 44 (1964).
11. K. S. V. Sampath Kumar, K. A. Walsh, J.-P. Bargetzi and H. Neurath. Chemical Relationships Among Various Forms of Bovine Pancreatic Carboxypeptidase A. Biochemistry 2, 1475 (1964).
12. K. A. Walsh, D. L. Kauffman, K. S. V. Sampath Kumar and H. Neurath. On the Structure and Function of Bovine Trypsinogen and Trypsin. Proc. Natl. Acad. Sci. USA 51, 301 (1964).
13. W. McClure, H. Neurath and K. A. Walsh. The Reaction of Carboxypeptidase with Hippuryl-DL- $\beta$ -Phenyllactate. Biochemistry 3, 1907 (1964).

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14. J.-P. Bargetzi, E. O. P. Thompson, K. S. V. Sampath Kumar, K. A. Walsh and H. Neurath. Amino And Carboxyl Terminal Residues and the Self Digestion of Bovine Pancreatic Carboxypeptidase A. *J. Biol. Chem.* 239, 3767 (1964).
15. K. S. V. Sampath Kumar, K. A. Walsh and H. Neurath. Chemical Characterization of Bovine Carboxypeptidase A Isolated from a Single Pancreas. *Biochemistry* 3, 1726 (1964).
16. K. S. V. Sampath Kumar, J. Clegg and K. A. Walsh. The N-Terminal Sequence of Bovine Carboxypeptidase A and Its Relation to Zymogen Activation. *Biochemistry* 3, 1728 (1964).
17. K. A. Walsh and H. Neurath. Trypsinogen and Chymotrypsinogen as Homologous Proteins. *Proc. Natl. Acad. Sci. USA* 52, 884 (1964).
18. K. A. Walsh, L. H. Ericsson and H. Neurath. Bovine Carboxypeptidase A Variants Resulting from Allelomorphism. *Proc. Natl. Acad. Sci. USA* 56, 1339 (1966).
19. L. L. Houston and K. A. Walsh. A Partially Active Trypsin Induced by Limited Acetylation. *Biochem. Biophys. Res. Commun.* 25, 175 (1966).
20. J. H. Freisheim, K. A. Walsh and H. Neurath. The Activation of Bovine Procarboxypeptidase A. I. Isolation and Properties of the Succinylated Enzyme Precursor. *Biochemistry* 6, 3010 (1967).
21. J. H. Freisheim, K. A. Walsh and H. Neurath. The Activation of Bovine Procarboxypeptidase A. II. Mechanism of Activation of the Succinylated Enzyme Precursor. *Biochemistry* 6, 3020 (1967).
22. H. Neurath, K. A. Walsh and W. P. Winter. Evolution of Structure and Function of Proteases. *Science* 158, 1638 (1967).
23. T. M. Radhakrishnan, K. A. Walsh and H. Neurath. Relief by Modification of Carboxylate Groups of the Calcium Requirements for the Activation of Trypsinogen. *J. Am. Chem. Soc.* 89, 3059 (1967).
24. H. Neurath, R. A. Bradshaw, L. H. Ericsson, D. R. Babin, P. H. Petra and K. A. Walsh. Current Status of the Chemical Structure of Bovine Pancreatic Carboxypeptidase A. *Brookhaven Symp. Biol.* 21, 1 (1968).
25. R. A. Kenner, K. A. Walsh and H. Neurath. The Reaction of Tyrosyl Residues of Bovine Trypsin and Trypsinogen with Tetranitromethane. *Biochem. Biophys. Res. Commun.* 33, 353 (1968).
26. W. P. Winter, K. A. Walsh and H. Neurath. Homology as Applied to Proteins. *Science* 162, 1433 (1968).
27. T. M. Radhakrishnan., S. F. Russo, K. A. Walsh and H. Neurath. The Inhibition of Trypsinogen Activation by Low Concentrations of Urea. *Arch. Biochem. Biophys.* 130, 326 (1969).

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28. R. Haynes and K. A. Walsh. Enzyme Envelopes on Colloidal Particles. *Biochem. Biophys. Res. Commun.* 36, 235 (1969).
29. R. A. Bradshaw, D. R. Babin, M. Nomoto, N. G. Srinivasin, L. H. Ericsson, K. A. Walsh and H. Neurath. The Amino Acid Sequence of Bovine Carboxypeptidase A. II. Tryptic and Chymotryptic Peptides of the Cyanogen Bromide Fragment FIII. *Biochemistry* 8, 3859 (1969).
30. R. A. Bradshaw, H. Neurath and K. A. Walsh. Considerations of the Concept of Structural Homology as Applied to Bovine Carboxypeptidases A and B. *Proc. Natl. Acad. Sci. USA* 63, 406 (1969).
31. R. R. Granberg, K. A. Walsh and R. A. Bradshaw. Increased Output and Accelerated Analysis Time with the Automatic Amino Acid Analyzer. *Anal. Biochem.* 30, 454 (1969).
32. T. M. Radhakrishnan, K. A. Walsh and H. Neurath. The Promotion of Activation of Bovine Trypsinogen by Specific Modification of Aspartyl Residues. *Biochemistry* 8, 4020 (1969).
33. R. A. Bradshaw, L. H. Ericsson, K. A. Walsh and H. Neurath. The Amino Acid Sequence of Bovine Carboxypeptidase A. *Proc. Natl. Acad. Sci. USA* 63, 1389 (1969).
34. L. L. Houston and K. A. Walsh. The Transient Inactivation of Trypsin by Mild Acetylation of N-Acetylimidazole. *Biochemistry* 9, 156 (1970).
35. P. H. Petra, R. A. Bradshaw, K. A. Walsh and H. Neurath. Identification of the Amino Acid Replacements Characterizing the Allotypic Forms of Bovine Carboxypeptidase A. *Biochemistry* 8, 2762 (1969).
36. K. A. Walsh, L. H. Ericsson, R. A. Bradshaw and H. Neurath. Chemical Evidence of a Disulfide Bond in Bovine Carboxypeptidase A. *Biochemistry* 9, 219 (1970).
37. H. Neurath, R. A. Bradshaw, P. H. Petra, K. A. Walsh. III. Carboxypeptidase. Bovine Carboxypeptidase A-Activation, Chemical Structure and Molecular Heterogeneity. *Phil. Trans. Roy. Soc. Lond.* B257, 159 (1970).
38. M. M. Sanders, K. A. Walsh and R. Arnon. Immunological Cross-Reaction between Trypsin and Chymotrypsin as a Guide to Structural Homology. *Biochemistry* 9, 2356 (1970).
39. R. A. Bradshaw, H. Neurath, R. W. Tye, K. A. Walsh and W. P. Winter. Comparison of the Partial Amino Acid Sequence of Dogfish Trypsinogen with Bovine Trypsinogen. *Nature* 226, 237 (1970).
40. K. A. Walsh, R. M. McDonald and R. A. Bradshaw. Automatic Systems for Detecting Cystine and Cystinyl Peptides During Column Chromatography. *Anal. Biochem.* 35, 193 (1970).
41. K. A. Walsh, L. L. Houston and R. A. Kenner. Chemical Modifications of Bovine Trypsinogen and Trypsin. Eds. P. Desnuelle, H. Neurath and M.



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Page 6

- Ottesen in "Structure-Function Relationship of Proteolytic Enzymes," published by Munksgaard, Copenhagen, Denmark, p. 56 (1970).
42. K. A. Walsh and P. E. Wilcox. Serine Proteases. In "Methods in Enzymology". XIX, p. 31, ed. by Perlman and Lorand, Academic Press, New York (1970).
  43. K. A. Walsh. Trypsinogens and Trypsins of Various Species. In "Methods in Enzymology," XIX, p. 41, ed. by Perlman and Lorand, Academic Press, New York (1970).
  44. R. A. Bradshaw, K. A. Walsh and H. Neurath. Amino Acid Sequence of Bovine Carboxypeptidase A. Isolation and Characterization of Selected Peptic and Nagarse Peptides and the Complete Sequence of Fragment F<sub>1</sub>. *Biochemistry* 10, 961 (1971).
  45. R. A. Bradshaw, K. A. Walsh and H. Neurath. Amino Acid Sequence of Bovine Carboxypeptidase A. Isolation and Characterization in the Thermolytic Peptides of the Cyanogen Bromide Fragment F<sub>1</sub>. *Biochemistry* 10, 951 (1971).
  46. R. A. Bradshaw, K. A. Walsh and H. Neurath. Amino Acid Sequence of Bovine Carboxypeptidase A. Typtic and Chymotryptic Peptides of the Cyanogen Bromide Fragment F<sub>1</sub>. *Biochemistry* 10, 938 (1971).
  47. M. A. Hermodson, R. W. Tye, G. R. Reeck, H. Neurath and K. A. Walsh. Comparison of the Amino Terminal Sequences of Bovine, Dogfish and Lungfish Trypsinogens. *FEBS Lett.* 14, 222 (1971).
  48. G. R. Reeck, K. A. Walsh, M. A. Hermodson and H. Neurath. New Forms of Bovine Carboxypeptidase B and Their Homologous Relationships to Carboxypeptidase A. *Proc. Natl. Acad. Sci. USA* 68, 1226 (1971).
  49. N. Robinson, R. W. Tye, H. Neurath and K. A. Walsh. Isolation of Trypsins by Affinity Chromatography. *Biochemistry* 10, 2743 (1971).
  50. P. H. Petra, M. A. Hermodson, K. A. Walsh and H. Neurath. Characterization of Bovine Carboxypeptidase A (Allan). *Biochemistry* 10, 4023 (1971).
  51. G. R. Reeck, K. A. Walsh and H. Neurath. Isolation and Characterization of Carboxypeptidases A and B from Activated Pancreatic Juice. *Biochemistry* 10, 4690 (1971).
  52. M. A. Hermodson, L. H. Ericsson, K. Titani, H. Neurath and K. A. Walsh. The Application of Sequenator Analyses to the Study of Proteins. *Biochemistry* 11, 4493 (1972).
  53. K. Titani, M. A. Hermodson, L. H. Ericsson, K. A. Walsh and H. Neurath. The Amino Acid Sequence of Thermolysin. *Nature* NB 238, 35 (1972).

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54. B. W. Matthews, P. M. Coleman, J. M. Janssonius, K. Titani, K. A. Walsh and H. Neurath. The Structure of Thermolysin. *Nature* NB 238, 41 (1972).
55. K. Titani, M. A. Hermodson, L. H. Ericsson, K. A. Walsh and H. Neurath. Amino Acid Sequence of Thermolysin. I. Isolation and Characterization of the Fragments Obtained by Cleavage with CNBr. *Biochemistry* 11, 2427 (1972).
56. M. A. Hermodson, R. W. Kuhn, K. A. Walsh, H. Neurath, N. Eriksen and E. P. Benditt. The Amino Acid Sequence of Monkey Amyloid Protein A. *Biochemistry* 11, 2934 (1972).
57. K. Titani, M. A. Hermodson, K. Fujikawa, L. H. Ericsson, K. A. Walsh, H. Neurath and E. W. Davie. Bovine Factor X<sub>Ia</sub> (Activated Stuart Factor): Evidence of Homology with Mammalian Serine Proteases. *Biochemistry* 11, 4899 (1972).
58. K. A. Walsh. Probing Biological Function and Tracing Molecular Evolution by Automated Sequence Analysis. In "Fractions," Beckman Instruments, Inc., Number 2, p. 1 (1972).
59. N. C. Robinson, H. Neurath and K. A. Walsh. Preparation and Characterization of epsilon-guanidinated Trypsin. *Biochemistry* 12, 414 (1973).
60. N. C. Robinson, H. Neurath and K. A. Walsh. Relation of the alpha-amino Group of Trypsin to Enzyme Function and Zymogen Activation. *Biochemistry* 12, 420 (1973).
61. P. H. Morgan, N. C. Robinson, K. A. Walsh and H. Neurath. Inactivation of Bovine Trypsinogen and Chymotrypsinogen by DFP. *Proc. Natl. Acad. Sci. USA* 69, 3312 (1972).
62. M. A. Hermodson, L. H. Ericsson, H. Neurath and K. A. Walsh. Determination of the Amino Acid Sequence of Porcine Trypsin by Sequenator Analysis. *Biochemistry* 12, 3146 (1973).
63. H. Neurath, K. A. Walsh and A. Gertler. Initiation of Physiological Functions by Limited Proteolysis. *Proc. 3rd Int. Symp. on Metabolic Interconversion of Enzymes*, Seattle, June 1973, p. 301.
64. M. K. Pangburn, Y. Burstein, P. H. Morgan, K. A. Walsh and H. Neurath. Affinity Chromatography of Thermolysin and of Neutral Protease from *B. subtilis*. *Biochem. Biophys. Res. Commun.* 54, 371 (1973).
65. K. A. Walsh, Y. Burstein and M. K. Pangburn. Affinity Chromatography of Thermolysin and Other Neutral Metalloendopeptidases. *Methods Enzymol.* 34, 435 (1974).
66. Y. Burstein, K. A. Walsh and H. Neurath. Evidence of an Essential Histidine Residue in Thermolysin. *Biochemistry* 13, 205 (1974).

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67. A. Gertler, K. A. Walsh and H. Neurath. Catalysis by Chymotrypsinogen: Increased Reactivity Due to Oxidation of Met 192. *FEBS Lett.* 8, 157 (1974).
68. P. H. Morgan, K. A. Walsh and H. Neurath. Inactivation of Trypsinogen by Methane Sulfonyl Fluoride. *FEBS Lett.* 41, 108 (1974).
69. A. Gertler, K. A. Walsh and H. Neurath. Catalysis by Chymotrypsinogen. Demonstration of an Acyl-zymogen Intermediate. *Biochemistry* 13, 1302 (1974).
70. D. L. Enfield, L. H. Ericsson, K. Fujikawa, K. Titani, K. A. Walsh and H. Neurath. Bovine Factor IX (Christmas Factor). Further Evidence of Homology with Factor X (Stuart Factor) and Prothrombin. *FEBS Lett.* 47, 132 (1974).
71. D. L. Enfield, L. H. Ericsson, K. A. Walsh, H. Neurath and K. Titani. Bovine Factor X<sub>1</sub> (Stuart Factor). Primary Structure of the Light Chain. *Proc. Natl. Acad. Sci. USA* 72, 16 (1974).
72. R. W. Kuhn, K. A. Walsh and H. Neurath. Isolation and Partial Characterization of an Acid Carboxypeptidase from Yeast. *Biochemistry* 13, 3871 (1974).
73. K. Titani, L. H. Ericsson, H. Neurath and K. A. Walsh. Amino Acid Sequence of Dogfish Trypsin. *Biochemistry* 14, 1358 (1975).
74. K. Titani, P. Cohen, K. A. Walsh and H. Neurath. Amino-terminal Sequence of Rabbit Muscle Phosphorylase. *FEBS Lett.* 55, 120 (1975).
75. K. Titani, L. H. Ericsson, K. A. Walsh and H. Neurath. Amino Acid Sequence of Bovine Carboxypeptidase B. *Proc. Natl. Acad. Sci. USA* 72, 1666 (1975).
76. K. A. Walsh. Unifying Concepts Among Proteases. *Cold Spring Harbor Symp. Cell Proliferation* 2, 1 (1975).
77. M. A. Kerr, K. A. Walsh and H. Neurath. Catalysis by Serine Proteases and Their Zymogens - A Study of Acyl Intermediates by Circular Dichroism. *Biochemistry* 14, 5088 (1975).
78. K. Titani, K. Fujikawa, D. L. Enfield, L. H. Ericsson, K. A. Walsh and H. Neurath. Bovine Factor X<sub>1</sub> (Stuart Factor). Amino Acid Sequence of the Heavy Chain. *Proc. Natl. Acad. Sci. USA* 72, 3082 (1975).
79. M. K. Pangburn and K. A. Walsh. Thermolysin and Neutral Protease: Mechanistic Considerations. *Biochemistry* 14, 4050 (1975).
80. E. J. B. Fodor, H. Ako and K. A. Walsh. Isolation of a Protease from Sea Urchin Eggs Before and After Fertilization. *Biochemistry* 14, 4923 (1975).

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81. P. L. Levy, M. K. Pangburn, Y. Burstein, L. H. Ericsson, H. Neurath and K. A. Walsh. Evidence of Homologous Relationship Between Thermolysin and Neutral Protease A of Bacillus subtilis. Proc. Natl. Acad. Sci. USA 72, 4341 (1975).
82. M. K. Pangburn, P. L. Levy, K. A. Walsh and H. Neurath. Thermal Stability of Neutral Metalloendopeptidases from Thermophilic and Mesophilic Bacteria: Structural Considerations. *Experientia*, Supp. 26, 19 (1976).
83. H. Neurath and K. A. Walsh. The Role of Proteases in Biological Regulation. In "Proteolysis and Physiological Regulation". Eighth Miami Winter Symposium, Vol. 11, 29 (1976).
84. H. Neurath and K. A. Walsh. Role of Proteolytic Enzymes in Biological Regulation (A Review). Proc. Natl. Acad. Sci. USA 73, 3825 (1976).
85. H. A. Kerr, K. A. Walsh and H. Neurath. A Proposal for the Mechanism of Chymotrypsinogen Activation. *Biochemistry* 15, 5566 (1976).
86. R. W. Kuhn, K. A. Walsh and H. Neurath. Reaction of Yeast Protease C with Group Specific Reagents. *Biochemistry* 15, 4881 (1976).
87. L. E. Anderson, K. A. Walsh and H. Neurath. Bovine Enterokinase: Purification, Specificity and Some Molecular Properties. *Biochemistry* 16, 3354 (1977).
88. K. Fujikawa, K. A. Walsh and E. W. Davie. Isolation and Characterization of Bovine Factor XII (Hageman Factor). *Biochemistry* 16, 2270 (1977).
89. R. D. Palmiter, J. Gagnon, L. H. Ericsson and K. A. Walsh. Precursor of Egg White Lysozyme: Amino-terminal Sequence of an Amino-terminal Extension. *J. Biol. Chem.* 252, 6386 (1977).
90. K. G. Bitar, D. T. Blankenship, K. A. Walsh, R. B. Dunlap, A. V. Reddy and J. H. Freisheim. Amino Acid Sequence of Dihydrofolate Reductase from an Amethopterin-resistant Strain of Lactobacillus casei. *FEBS Lett.* 80, 119 (1977).
91. C. DeHaën, K. A. Walsh and H. Neurath. Isolation and Amino-terminal Sequence Analysis of a New Pancreatic Trypsinogen of the African Lungfish Protopterus aethiopicus. *Biochemistry* 16, 4421 (1977).
92. K. Titani, A. Koide, J. Hermann, L. H. Ericsson, S. Kumar, R. D. Wade, K. A. Walsh, H. Neurath and E. H. Fischer. The Complete Amino Acid Sequence of Rabbit Muscle Glycogen Phosphorylase. Proc. Natl. Acad. Sci. USA 74, 4762 (1977).
93. R. D. Palmiter, S. N. Thibodeau, J. Gagnon and K. A. Walsh. Role of Proteases in the Secretion of Lysozyme, Ovomucoid, Canalbumin, and Ovalbumin from the Chick Oviduct. In Regulatory Proteolytic Enzymes and Their Inhibitors (ed. S. Magnusson et al.), FEBS 11th Meeting, Vol. 46, Symposium A6, p. 89 (1977).

Kenneth A. Walsh

Page 10

94. H. Neurath and K. A. Walsh. The Role of Proteases in Physiological Regulation: An Overview. In Regulatory Proteolytic Enzymes and Their Inhibitors (ed. S. Magnusson et al.), FEBS 11th Meeting, Vol. 46, Symposium A6, p. 1 (1977).
95. L. H. Ericsson, R. D. Wade, J. Gagnon, R. M. McDonald, R. Granberg and K. A. Walsh. High Performance Liquid Chromatography of Pth-Amino Acids Using a Durrum D-500 Analyzer. In Solid Phase Methods in Protein Sequence Analysis, INSERM Symposium Number 5 (ed. A. Previero and M. A. Coletti-Previero). North Holland Publ. Co. Amsterdam, p. 137 (1977).
96. R. D. Palmiter, J. Gagnon and K. A. Walsh. Ovalbumin: A Secreted Protein Without a Transient Hydrophobic Leader Sequence. *Proc. Natl. Acad. Sci. USA* 75, 94 (1978).
97. A. E. Levine, K. A. Walsh and E. J. B. Fodor. Evidence of an Acrosin-like Enzyme in Sea Urchin Sperm. *Develop. Bio.* 63, 299 (1978).
98. K. A. Walsh, L. H. Ericsson and K. Titani. Strategies of Amino Acid Sequence Analysis. In "Versatility of Proteins," ed. C. H. Li, Academic Press, p. 39 (1978).
99. M. A. Kerr, D. T. Grahn, K. A. Walsh and H. Neurath. The Activation of Bovine Factor X (Stuart Factor)--Analogy with Pancreatic Zymogen-Enzyme Systems. *Biochemistry* 17, 2645 (1978).
100. J. D. Lonsdale-Eccles, H. Neurath and K. A. Walsh. Probes of the Mechanism of Zymogen Catalysis. *Biochemistry* 17, 2805 (1978).
101. J. Gagnon, R. D. Palmiter and K. A. Walsh. Comparison of the NH<sub>2</sub>-terminal Sequence of Ovalbumin as Synthesized in vitro and in vivo. *J. Biol. Chem.* 253, 7464 (1978).
102. S. N. Thibodeau, R. D. Palmiter and K. A. Walsh. Precursor of Egg White Ovomucoid: Amino Acid Sequence of an NH<sub>2</sub>-terminal Extension. *J. Biol. Chem.* 253, 9018 (1978).
103. A. Koide, K. Titani, L. H. Ericsson, S. Kumar, H. Neurath and K. A. Walsh. The Sequence of the Amino-terminal 349 Residues of Rabbit Muscle Glycogen Phosphorylase Including the Sites of Covalent and Allosteric Control. *Biochemistry* 17, 5657 (1978).
104. J. Hermann, K. Titani, L. H. Ericsson, R. D. Wade, H. Neurath and K. A. Walsh. The Amino Acid Sequence of Two Cyanogen Bromide Fragments of Glycogen Phosphorylase. *Biochemistry* 17, 5672 (1978).
105. K. Titani, A. Koide, L. H. Ericsson, S. Kumar, J. Hermann, R. D. Wade, K. A. Walsh, H. Neurath and E. H. Fischer. The Sequence of the Carboxyl-terminal 492 Residues of Rabbit Muscle Glycogen Phosphorylase, Including the Pyridoxal-5'-Phosphate Binding Site; with appendices by J. A. Jenkins, L. N. Johnson and K. S. Wilson and by S. Sprang and R. J. Fletterick. *Biochemistry* 17, 5680 (1978).

Kenneth A. Walsh  
Page 11

106. A. E. Levine and K. A. Walsh. Involvement of an Acrosin-like Enzyme in the Acrosin Reaction of Sea Urchin Sperm. *Develop. Biol.* 72, 126 (1979).
107. J. D. Lonsdale-Eccles, M. A. Kerr, K. A. Walsh and H. Neurath. Catalysis by Zymogens: Increased Reactivity at High Ionic Strengths. *FEBS Lett.* 100, 157 (1979).
108. K. Katayama, L. H. Ericsson, D. L. Enfield, K. A. Walsh, H. Neurath, E. W. Davie and K. Titani. Comparison of the Amino Acid Sequence of Bovine Coagulation Factor IX (Christmas Factor) with Other Vitamin K-dependent Plasma Proteins. *Proc. Natl. Acad. Sci. USA* 72, 4990 (1979).
109. W. L. Maloy, B. U. Bowein, G. K. Zwolinski, K. G. Kumar, H. G. Wood, L. H. Ericsson and K. A. Walsh. Amino Acid Sequences of the Biotinyl Subunit from Transcarboxylase. *J. Biol. Chem.* 254, 11615 (1979).
110. S. N. Thibodeau and K. A. Walsh. Processing of Precursor Proteins by Preparations of Oviduct Microsomes. *Ann. N.Y. Acad. Sci.* 343, 180 (1980).
111. D. L. Enfield, L. H. Ericsson, K. Fujikawa, K. A. Walsh, H. Neurath and K. Titani. Amino Acid Sequence of the Light Chain of Bovine Coagulation Factor X<sub>I</sub> (Stuart Factor). *Biochemistry* 19, 659 (1980).
112. A. E. Levine and K. A. Walsh. Purification of an Acrosin-like Enzyme from Sea Urchin Sperm. *J. Biol. Chem.* 255, 4814 (1980).
113. K. Takio, K. A. Walsh, H. Neurath, S. B. Smith, E. G. Krebs and K. Titani. The Amino Acid Sequence of a Hinge Region in the Regulatory Subunit of Bovine Cardiac Muscle Cyclic AMP-dependent Protein Kinase II. *FEBS Lett.* 114, 83 (1980).
114. D. P. Bloxham, L. H. Ericsson, K. Titani, K. A. Walsh and H. Neurath. Limited Proteolysis of Pig Heart Citrate Synthase by Subtilisin, Chymotrypsin and Trypsin. *Biochemistry* 19, 3979 (1980).
115. K. A. Walsh, L. H. Ericsson, D. C. Parmelee and K. Titani. Advances in Protein Sequencing. *Ann. Rev. Biochem.* 50, 261 (1981).
116. K. Titani, S. Shoji, L. H. Ericsson, J. D. Demaille, K. A. Walsh, H. Neurath, E. H. Fischer, K. Takio, S. B. Smith and E. G. Krebs. Primary Structure of cAMP-dependent Protein Kinase Type II from Bovine Cardiac Muscle. *Cold Spring Harbor Conf. Cell Prolif.* 8, 19 (1981).
117. S. Shoji, D. C. Parmelee, R. D. Wade, S. Kumar, L. H. Ericsson, K. A. Walsh, H. Neurath, G. L. Long, J. G. Demaille, E. H. Fischer and K. Titani. Complete Amino Acid Sequence of the Catalytic Subunit of Bovine Cardiac Muscle Cyclic AMP-dependent Protein Kinase. *Proc. Natl. Acad. Sci. USA* 78, 848 (1981).
118. R. A. Bradshaw, F. Cancedda, L. H. Ericsson, P. A. Neumann, S. P. Piccoli, M. J. Schlesinger, K. Shrieffer, and K. A. Walsh. Amino Acid

Kenneth A. Walsh  
Page 12

- Sequence of Escherichia coli Alkaline Phosphatase. Proc. Natl. Acad. Sci. USA 78, 3473 (1981).
119. D. P. Bloxham, D. C. Parmelee, S. Kumar, R. D. Wade, L. H. Ericsson, H. Neurath, K. A. Walsh and K. Titani. The Primary Structure of Porcine Heart Citrate Synthase. Proc. Natl. Acad. Sci. USA 78, 5381 (1981).
  120. K. A. Walsh. Modulation of Primary Structure in Control and Secretion of Proteins. In Proteins in Biology and Medicine (ed. R. A. Bradshaw et al.) Academic Press, London, p. 119 (1982).
  121. T. Sasagawa, L. H. Ericsson, K. A. Walsh, W. E. Schreiber, E. H. Fischer and K. Titani. The Complete Amino Acid Sequence of Human Brain Calmodulin. Biochemistry 21, 2565 (1982).
  122. D. P. Bloxham, D. C. Parmelee, S. Kumar, K. A. Walsh and K. Titani. Complete Amino Acid Sequence of Porcine Heart Citrate Synthase. Biochemistry 21, 2028 (1982).
  123. K. A. Walsh. Strategic Approaches to Sequence Analysis. In Methods in Protein Sequence Analysis (ed. M. Elzinga) Humana Press, New Jersey, p. 67 (1982).
  124. E. P. Benditt, J. S. Hoffman, N. Eriksen, D. C. Parmelee and K. A. Walsh. SAA, an Apoprotein of HDL: Its Structure and Function. Ann. N.Y. Acad. Sci. 389, 183 (1982).
  125. K. Takio, S. B. Smith, E. G. Krebs, K. A. Walsh and K. Titani. Primary Structure of the Regulatory Subunit of Type II cAMP-dependent Protein Kinase from Bovine Cardiac Muscle. Proc. Natl. Acad. Sci. USA 79, 2544 (1982).
  126. D. C. Parmelee, K. Titani, L. H. Ericsson, N. Eriksen, E. P. Benditt and K. A. Walsh. The Amino Acid Sequence of Amyloid-related Apoprotein (apSAA<sub>1</sub>) from Human High Density Lipoprotein. Biochemistry 21, 3298 (1982).
  127. K. Titani, T. Sasagawa, K. Resing and K. A. Walsh. A Simple and Rapid Purification of Commercial Trypsin and Chymotrypsin by Reverse-phase HPLC. Anal. Biochem. 123, 408 (1982).
  128. R. L. Meek, K. A. Walsh and R. D. Palmiter. The Signal Sequence of Ovalbumin is Located Near the Amino Terminus. J. Biol. Chem. 257, 12245 (1982).
  129. T. R. Soderling and K. A. Walsh. Selective Modification and Purification of Phosphopeptides for Automated Sequence Analysis. J. Chromatogr. 253, 243 (1982).
  130. T. Sasagawa, K. Titani and K. A. Walsh. Selective Isolation of Methionine-containing Peptides by Hydrophobicity Modulation. Anal. Biochem. 128, 371 (1983).

Kenneth A. Walsh

Page 13

131. K. Takio, S. B. Smith, K. A. Walsh, E. G. Krebs and K. Titani. Amino Acid Sequence Around a Hinge Region and Its Autophosphorylation Site in Bovine Lung cGMP-dependent Protein Kinase. *J. Biol. Chem.* **258**, 5531 (1983).
132. M. O. Lively and K. A. Walsh. Hen Oviduct Signal Peptidase is an Integral Membrane Protein. *J. Biol. Chem.* **258**, 9488 (1983).
133. T. Sasagawa, K. Titani and K. A. Walsh. Selective Isolation of Tryptophan-containing Peptides by Hydrophobicity Modulation. *Anal. Biochem.* **134**, 224 (1983).
134. S. Shoji, L. H. Ericsson, K. A. Walsh, E. H. Fischer and K. Titani. Amino Acid Sequence of the Catalytic Subunit of Bovine Type II cAMP-dependent Protein Kinase. *Biochemistry* **22**, 3702 (1983).
135. M. O. Lively and K. A. Walsh. Proteolysis of Human Pre-placental Lactogen by Detergent-solubilized Hen Oviduct Signal Peptidase. in Protein Transport and Secretion (ed. D. L. Oxender) A. R. Liss, New York, pp. 379-387 (1984).
136. K. A. Walsh and T. Sasagawa. HPLC Probes for Posttranslationally Modified Amino Acids. *Methods Enzymol.* **106**, 22 (1984).
137. T. Sasagawa, L. H. Ericsson, D. C. Teller, K. Titani and K. A. Walsh. Separation of Peptides on a Polystyrene Resin Column. *J. Chromatogr., Biomed. Appl.* **307**, 29 (1984).
138. J. S. Hoffman, L. H. Ericsson, N. Eriksen, K. A. Walsh and E. P. Benditt. Murine Tissue Amyloid Protein AA.  $\text{NH}_2$ -terminal Sequence Identity with Only One of Two Serum Amyloid Protein (Apo SAA) Gene Products. *J. Exp. Med.* **159**, 641 (1984).
139. E. M. Reimann, K. Titani, L. H. Ericsson, R. D. Wade, E. H. Fischer and K. A. Walsh. Homology of the gamma-Subunit of Phosphorylase b Kinase with cAMP-dependent Protein Kinase. *Biochemistry* **23**, 4185 (1984).
140. K. Titani, T. Sasagawa, L. H. Ericsson, S. Kumar, S. B. Smith, E. G. Krebs and K. A. Walsh. Amino Acid Sequence of the Regulatory Subunit of Bovine Type I cAMP-dependent Protein Kinase. *Biochemistry* **23**, 4193 (1984).
141. K. Takio, S. B. Smith, E. G. Krebs, K. A. Walsh and K. Titani. Amino Acid Sequence of the Regulatory Subunit of Bovine Type II Adenosine Cyclic 3',5'-phosphate Dependent Protein Kinase. *Biochemistry* **23**, 4200 (1984).
142. K. Takio, R. D. Wade, S. B. Smith, E. G. Krebs, K. A. Walsh and K. Titani. Guanosine Cyclic 3',5'-phosphate Dependent Protein Kinase, A Chimeric Protein Homologous with Two Separate Protein Families. *Biochemistry* **23**, 4207 (1984).



Kenneth A. Walsh  
Page 14

143. P. A. Karplus, K. A. Walsh and J. R. Herriott. Amino Acid Sequence of Spinach Ferredoxin:NADP<sup>+</sup> Oxidoreductase. *Biochemistry* 23, 6576 (1984).
144. K. A. Resing, K. A. Walsh and B. A. Dale. Identification of Two Intermediates during Processing of Profilaggrin to Filaggrin in Neonatal Mouse Epidermis. *J. Cell Biol.* 99, 1372 (1984).
145. G. A. Marchildon, J. E. Casnellie, K. A. Walsh and E. G. Krebs. Covalently Bound Myristate in a Lymphoma Tyrosine Protein Kinase. *Proc. Natl. Acad. Sci. USA* 81, 7679 (1984).
146. K. A. Resing, J. D. Green and K. A. Walsh. A 53,000-Da Esterase in Strongylocentrotus purpuratus Semen is Derived from Phagocytic Cells, Not Sperm. *Devel. Biol.* 107, 87 (1985).
147. K. Takio, D. K. Blumenthal, A. M. Edelman, K. A. Walsh, E. G. Krebs and K. Titani. Amino Acid Sequence of an Active Fragment of Rabbit Skeletal Muscle Myosin Light Chain Kinase. *Biochemistry* 24, 6028 (1985).
148. D. K. Blumenthal, K. Takio, A. M. Edelman, H. Charbonneau, K. Titani, K. A. Walsh and E. G. Krebs. Identification of the Calmodulin-binding Domain of Skeletal Muscle Myosin Light Chain Kinase. *Proc. Natl. Acad. Sci. USA* 82, 3187 (1985).
149. H. Charbonneau, K. A. Walsh, R. O. McCann, F. G. Prendergast, M. J. Cormier and T. C. Vanaman. Amino Acid Sequence of the Calcium-dependent Photoprotein Aequorin. *Biochemistry* 24, 6762 (1985).
150. K. A. Resing, B. A. Dale and K. A. Walsh. Multiple Copies of Phosphorylated Filaggrin in Epidermal Profilaggrin Demonstrated by Analysis of Tryptic Peptides. *Biochemistry* 24, 4167 (1985).
151. A. M. Edelman, K. Takio, D. K. Blumenthal, R. Scott Hansen, K. A. Walsh, K. Titani and E. G. Krebs. Characterization of the Calmodulin-binding and Catalytic Domains in Skeletal Muscle Myosin Light Chain Kinase. *J. Biol. Chem.* 260, 11275 (1985).
152. S. Hormel, E. Adman, K. A. Walsh, T. Beppu and K. Titani. The Amino Acid Sequence of the Blue Copper Protein of Alcaligenes faecalis. *FEBS Lett.* 197, 301 (1986).
153. K. Titani, S. Kumar, K. Takio, L. H. Ericsson, R. D. Wade, K. Ashida, K. A. Walsh, M. W. Chopek, J. E. Sadler and K. Fujikawa. Amino Acid Sequence of Human von Willebrand Factor. *Biochemistry* 25, 3171 (1986).
154. K. A. Walsh, K. Titani, K. Takio, S. Kumar, R. Hayes and P. H. Petra. Amino Acid Sequence of the Sex Steroid-binding Protein of Human Blood Plasma. *Biochemistry* 25, 7584 (1986).
155. K. Takio, D. K. Blumenthal, K. A. Walsh, K. Titani and E. G. Krebs. Amino Acid Sequence of Rabbit Skeletal Muscle Myosin Light Chain Kinase. *Biochemistry* 25, 8049 (1986).

Kenneth A. Walsh  
Page 15

156. S. Hormel, K. A. Walsh, B. C. Prickril, K. Titani, J. LeGall and L. C. Sieker. Amino Acid Sequence of Rubredoxin from Desulfovibrio desulfuricans Strain 27774. FEBS Lett. 201, 147 (1986).
157. H. Charbonneau, N. Beier, K. A. Walsh and J. Beavo. Identification of a conserved Domain among Cyclic Nucleotide Phosphodiesterases from Diverse Species. Proc. Natl. Acad. Sci. U.S.A. 83, 9308 (1986).
158. K. Titani, H.-J. Torff, S. Hormel, S. Kumar, K. A. Walsh, J. Rödl, H. Neurath and R. Zwillig. Amino Acid Sequence of a Unique Protease from the Crayfish Astacus fluviatilis. Biochemistry 26, 222 (1987).
159. P. H. Petra, P. C. Namkung, K. Titani and K. A. Walsh. Characterization of the Plasma Sex Steroid-binding Protein. In Binding Proteins of Steroid Hormones. Colloque INSERM 149, 15 (1986).
160. P. H. Petra, K. Titani, K. A. Walsh, D. R. Joseph, S. H. Hall and F. S. French. Comparison of the Amino Acid Sequence of the Sex Steroid-binding Protein of Human Plasma (SBP) with that of the Androgen-binding Protein (ABP) of Rat Testis. In Binding Proteins of Steroid Hormones. Colloque INSERM 149, 137 (1986).
161. R. M. Mettrione, H. Schweitz and K. A. Walsh. The Amino Acid Sequence of Toxin Rp<sub>III</sub> from the Sea Anemone Radianthus paumotensis. FEBS Lett. 218, 59 (1987).
162. K. Takio, E. A. Kuenzel, K. A. Walsh and E. G. Krebs. Amino Acid Sequence of the beta-Subunit of Bovine Lung Casein Kinase II. Proc. natl. Acad. Sci. U.S.A. 84, 4851 (1987).
163. H. Charbonneau, J. P. Novack, R. T. MacFarland, K. A. Walsh and J. A. Beavo. Structure and Function of Calmodulin-dependent Phosphodiesterase Isozymes. In Calcium-binding Proteins in Health and Disease (Norman, A.W., Vanaman, T.C., and Means, A.R., Eds.), Academic Press, Orlando, FL, pp. 505-517 (1987).
164. K. A. Walsh. Protein Sequencing and Covalent Processing. In "Signal Transduction and Protein Phosphorylation" (ed. L. Heilmeyer), Plenum Press, NY, pp. 37-43 (1987).
165. K. A. Walsh. The Protein Kinase Family. In Signal Transduction and Protein Phosphorylation. (L. Heilmeyer, Ed.), Plenum Press, NY, pp. 185-193 (1987).
166. K. A. Walsh, ed. Methods in Protein Sequence Analysis 1986. Humana Press, Clifton, NJ (1987).
167. K. Titani, T. Marti, K. Takio and K. A. Walsh. Primary Structure of Human von Willebrand Factor. In Coagulation and Bleeding Disorders, the Role of Factor VIII and von Willebrand Factor (T. S. Zimmerman and Z. M. Ruggeri, Eds.), Marcel Dekker, Inc., NY, pp. 99-116 (1989).

Kenneth A. Walsh

Page 16

168. L. H. Ericsson, N. Eriksen, K. A. Walsh and E. P. Benditt. Primary Structure of Duck Amyloid Protein A: The Form Deposited in Tissues May Be Identical to Its Serum Precursor. *FEBS Lett.* 216, 11 (1987).
169. B. T. Wakim, K. A. Alexander, H. R. Masure, B. M. Cimler, D. R. Storm and K. A. Walsh. Amino Acid Sequence of P-57, a Neurospecific Calmodulin-binding Protein. *Biochemistry* 26, 7466 (1987).
170. Marti, T., S. Rosselet, K. Titani and K. A. Walsh. Identification of Disulfide-bridged Substructures within Human von Willebrand factor. *Biochemistry* 26, 8099 (1987).
171. H. Le Trong, D. C. Parmelee, K. A. Walsh, H. Neurath and R. G. Woodbury. Amino Acid Sequence of Rat Mast Cell Protease I (Chymase). *Biochemistry* 26, 6988 (1987).
172. T. Marti, K. Takio, K. A. Walsh, G. Terzi and J. W. Truman. Microanalysis of the Amino Acid Sequence of the Eclosion Hormone from the Tobacco Hornworm Manduca sexta. *FEBS Lett.* 219, 415 (1987).
173. R. D. Wade, G. M. Hass, S. Kumar, K. A. Walsh and H. Neurath. The Amino Acid Sequence of the Activation Peptide of Bovine procarboxypeptidase A. *Biochimie* 70, 1137 (1988).
174. P. J. Kennelly, K. Takio, D. K. Blumenthal, A. M. Edelman, M. B. Glaccum, R. E. Klevit, C. L. Roush, J. D. Scott, K. Titani, K. A. Walsh and E. G. Krebs. Organization of Myosin Light Chain Kinase from Rabbit Skeletal Muscle. In Calcium Binding Proteins in Health and Disease (Norman, A.W., Vanaman, T.C., and Means, A.R., Eds.), Academic Press, Orlando, FL, p. 494-504 (1987).
175. D. R. Eyre, S. Apone, J.-J. Wu, L. H. Ericsson and K. A. Walsh. Collagen Type IX: Evidence for Covalent Linkages to Type II Collagen in Cartilage. *FEBS Lett.* 220, 337 (1987).
176. W. H. Cover, J. P. Ryan, P. J. Bassford, Jr., K. A. Walsh, J. Bollinger and L. L. Randall. Suppression of a Signal Sequence Mutation by an Amino Acid Substitution in the Mature Portion of the Maltose-binding Protein. *J. Bacteriology* 169, 1794 (1987).
177. K. Titani and K. A. Walsh. Human von Willebrand Factor: The Molecular Glue of Platelet Plugs. *TIBS* 13, 94 (1988).
178. K. A. Alexander, B. T. Wakim, G. S. Doyle, K. A. Walsh and D. R. Storm. Identification and Characterization of the Calmodulin-binding Domain of Neuromodulin, A Neurospecific Calmodulin-binding Protein. *J. Biol. Chem.* 263, 7544 (1988).
179. P. H. Petra, B. G. Que, P. C. Namkung, J. B. A. Ross, H. Charbonneau, K. A. Walsh, P. R. Griffin, J. Shabanowitz and D. F. Hunt. Affinity Labeling, Molecular Cloning, and Comparative Amino Acid Sequence Analyses of Sex Steroid-binding Protein of Plasma. A Multidisciplinary Approach for Understanding Steroid-Protein Interaction and Its Physiological Role. *Ann. N.Y. Acad. Sci.* 538 10 (1988).

Kenneth A. Walsh  
Page 17

180. H. Charbonneau, N. K. Tonks, K. A. Walsh and E. H. Fischer. The Leukocyte Common Antigen (CD45): A putative receptor-linked protein tyrosine phosphatase. *Proc. Natl. Acad. Sci. USA* 85 7182 (1988).
181. K. A. Resing, K. A. Walsh, J. Haugen-Scofield and B. A. Dale. Identification of Proteolytic Cleavage Sites in the Conversion of Profilaggrin to Filaggrin in Mammalian Epidermis. *J. Biol. Chem.*, 264 1837 (1989).
182. J. P. Novack, H. Charbonneau, D. K. Blumenthal, K. A. Walsh and J. A. Beavo. The Domain Structure of the Calmodulin-dependent Phosphodiesterase Isozymes. In *Protein Signaling* (H. Hidaka, E. Carafoli, A. R. Means, & T. Tanaka, Eds), Plenum; New York, 1989, pp 387-395.
183. S. Naylor, S. G. Ang, D. H. Williams, C. H. Moore & K. A. Walsh. Rapid determination of sequence variations in actinidin isolated from *Actinidia Chinensis* (var. Hayward) using FAB mapping MS and gas phase microsequencing. *Biomed. Environ. Mass Spectrom.* 18, 424 (1989).
184. H. Charbonneau, S. Kumar, J. P. Novack, D. K. Blumenthal, P. R. Griffin, J. Shabanowitz, D. F. Hunt, J. A. Beavo & K. A. Walsh. Evidence for Domain Organization within the 61 kDa Calmodulin-dependent Cyclic Nucleotide Phosphodiesterase from Bovine Brain. *Biochemistry* 30, 7931 (1991)
185. J. P. Novack, H. Charbonneau, K. A. Walsh & J. A. Beavo. Sequence Comparison of the 63-, 61-, and 59-kDa Calmodulin-dependent Cyclic Nucleotide Phosphodiesterases. *Biochemistry* 30, 7940 (1991)
186. N.K. Tonks, H. Charbonneau, C.D. Diltz, E.H. Fischer and K.A. Walsh. Demonstration that the leukocyte common antigen (CD45) is a protein tyrosine phosphatase. *Biochemistry* 27, 8695 (1988).
187. H. Charbonneau, N.K. Tonks, S. Kumar, C.D. Diltz, M. Harrylock, D.E. Cool, E.G. Krebs, E.H. Fischer & K.A. Walsh. Human Placenta Protein Tyrosine Phosphatase: Amino Acid Sequence and Relationship to a Family of Receptor-like Proteins. *Proc. Natl. Acad. Sci. USA* 86, 5252 (1989).
188. K.A. Walsh, H. Charbonneau, T. Marti, J. Novack and J.A. Beavo. The identification and significance of substructural domains. In *Methods in Protein Sequence Analysis* (B. Wittmann-Liebold, Ed). Springer-Verlag, Berlin, pp. 450-457 (1989).
189. N.K. Tonks, H. Charbonneau, C.D. Diltz, S. Kumar, M.F. Cicirelli, E.G. Krebs, K.A. Walsh and E.H. Fischer. Protein Tyrosine Phosphatases: Structure, Properties and Role in Signal Transduction. *Advances in Protein Phosphatases* 5, 149-180 (1989).
190. P.R. Griffin, S. Kumar, J. Shabanowitz, H. Charbonneau, P.C. Namkung, K.A. Walsh, D.F. Hunt & P.H. Petra. The amino acid sequence of the sex steroid-binding protein of rabbit serum. Evidence for a sex-steroid binding protein gene family distinct from steroid receptors. *J. Biol. Chem.* 264, 19066 (1989).

Kenneth A. Walsh

Page 18

191. D.E. Cool, N.K. Tonks, H. Charbonneau, K.A. Walsh, E.H. Fischer & E.G. Krebs. A cDNA isolated from a Human T Cell library Encodes a New Member of the Protein Tyrosine Phosphatase Family. Proc. Natl. Acad. Sci. USA 86, 5257 (1989).
192. H. Charbonneau, R.K. Prusti, H. LeTrong, W.K. Sonnenburg, P.J. Mullaney, K.A. Walsh & J.A. Beavo. Identification of a Noncatalytic, cGMP-binding Domain conserved in both the cGMP-stimulated- and Photoreceptor Cyclic Nucleotide Phosphodiesterases. Proc. Natl. Acad. Sci. USA 87, 288 (1990)
193. D. W. Litchfield, F. J. Lozeman, C. Piening, J. Sommercorn, K. Takio, K. A. Walsh & E. G. Krebs. Subunit Structure of Casein Kinase II from Bovine Testis: Demonstration that the alpha and alpha' subunits are distinct polypeptides. J. Biol. Chem. 265, 7638 (1990)
194. P. C. Namkung, S. Kumar, K. A. Walsh & P. H. Petra. Identification of Lysine-134 in the Steroid Binding Site of the Sex Steroid-Binding Protein of Human Plasma. J. Biol. Chem. 265, 18345 (1990)
195. F. J. Lozeman, D. W. Litchfield, C. Piening, K. Takio, K. A. Walsh & E. G. Krebs. Isolation and Characterization of Human cDNA clones encoding the alpha and alpha' subunits of casein kinase II. Biochemistry 29, 8436 (1990)
196. H. Le Trong, N. Beier, W. K. Sonnenburg, S. D. Stroop, K. A. Walsh, J. A. Beavo, & H. Charbonneau. Amino Acid Sequence of the Cyclic GMP-Stimulated Cyclic Nucleotide Phosphodiesterase from Bovine Heart. Biochemistry 29, 10280 (1990)
197. E. D. Apel, M. F. Byford, D. Au, K. A. Walsh & D. R. Storm. Identification of the Protein Kinase C Phosphorylation Site in Neuromodulin. Biochemistry 29, 2330 (1990)
198. E. H. Fischer, N. K. Tonks, H. Charbonneau, M. F. Cicirelli, D. E. Cool, C. D. Diltz, E. G. Krebs & K. A. Walsh. Protein Tyrosine Phosphatases: A novel family of enzymes involved in transmembrane signalling. Advanc. 2nd Messenger & Phosphoprotein Research 24, 273 (1990)

Kenneth A. Walsh

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199. S. Kumar, M. Harrylock, K. A. Walsh, M. J. Cormier, & H. Charbonneau. Amino Acid Sequence of the  $\text{Ca}^{2+}$ -Triggered Luciferin Binding Protein of *Renilla reniformis*. FEBS 268, 287 (1990)
200. K. R. Cole, S. Kumar, H. Le Trong, R. G. Woodbury, K. A. Walsh, & H. Neurath. Rat Mast Cell Carboxypeptidase: Amino Acid Sequence and Evidence of Enzyme Activity within Mast Cell Granules. Biochemistry 30, 648 (1990)
201. A. M. Dizhoor, S. Ray, S. Kumar, M. Spencer, G. Niemi, D. Brolley, K. A. Walsh, P. P. Phillipox, J. B. Hurley, & L. Stryer. Recoverin, A Calcium-Sensitive Activator of Retinal Rod Guanylate Cyclase. Science 251, 915 (1991)
202. D. R. Stover, H. Charbonneau, N. K. Tonks, & K. A. Walsh. Protein Tyrosine Phosphatase CD45 is Phosphorylated Transiently on Tyrosine upon Activation of Jurkat T-Cells. Proc. Natl. Acad. Sci. USA 88, 7704 (1991)
203. N. K. Tonks, D. E. Cool, H. Charbonneau, P. R. Andreassen, R. L. Margolis, K. A. Walsh, E. G. Krebs, & E. H. Fischer. Protein Tyrosine Phosphatases and their Role in Signal Transduction and Cell Cycle Control. in Origins of Human Cancer: A Comprehensive Review. Cold Spring Harbor Laboratory Press, p. 265 (1991)
204. L. L. Isom, K. S. De Jongh, D. E. Patton, B. F. X. Reber, J. Offord, H. Charbonneau, K. Walsh, A. L. Goldin, & W. A. Catterall. Primary Structure and Functional Expression of the  $\beta_1$  Subunit of the Rat Brain Sodium Channel. Science 256, 839 (1992).
205. A. M. Dizhoor, L. H. Ericsson, R. S. Johnson, S. Kumar, E. Olshevskaya, S. Zozulya, T. A. Neubert, L. Stryer, J. B. Hurley, & K. A. Walsh. The  $\text{NH}_2$  Terminus of Retinal Recoverin is Acylated by a Small Family of Fatty Acids. J. Biol. Chem. 267, 16033 (1992).
206. R. S. Johnson & K. A. Walsh. Sequence Analysis of Peptide Mixtures by Automated Integration of Edman and Mass Spectrometric Data. Protein Science 1, 1083 (1992).
207. T. A. Neubert, R. S. Johnson, J. B. Hurley, & K. A. Walsh. The Rod Transducin  $\alpha$  Subunit Amino Terminus is Heterogeneously Fatty Acylated. J. Biol. Chem. 267, 18274 (1992).
208. D. R. Stover & K. A. Walsh. A Novel Method of Identifying Phosphorylation Sites Using a Thiophosphorylated Peptide and ESI-MS. In Techniques in Protein Chemistry IV (ed. R. Hogue-Angeletti). Academic Press Inc. p. 193 (1993).
209. K. A. Walsh, L. H. Ericsson & R. S. Johnson. Application of Electrospray Ionization-Mass Spectrometry to Proteins. In Proceedings Japanese Society Biomed. Mass Spectrometry. Kanazawa, Japan, Sept. 16-18, pp. 113 (1992).

Kenneth A. Walsh

Page 20

210. X. Tan, D. R. Stover & K. A. Walsh. Demonstration of Protein-Tyrosine Phosphatase Activity in the Second of Two Homologous Domains of CD45. J. Biol. Chem. **268**, 6835 (1993).
211. K. A. Walsh, L. H. Ericsson, K. Resing & R. S. Johnson. Electrospray-Mass Spectrometry, an Emerging Methodology for Elucidating Structure-Function Relationships of Proteins. in Methods in Protein Sequence Analysis, Eds. K. Imahori and F. Sakiyama, Plenum Press, New York, p. 143 (1993).
212. K. A. Resing, R. S. Johnson, K. A. Walsh. Characterization of Protein Processing Sites During Conversion of Rat Profilaggrin to Filaggrin. Biochemistry **32**, 10036 (1993).
213. H. Ohguro, K. Palczewski, L. H. Ericsson, K. A. Walsh, & R. S. Johnson. Sequential Phosphorylation of Rhodopsin at Multiple Sites. Biochemistry **32**, 5718 (1993).
214. L. M. McAllister-Lucas, W. K. Sonnenburg, A. Kadlecek, D. Seger, H. Le Trong, J. L. Colbran, M. K. Thomas, K. A. Walsh, S. H. Francis, J. D. Corbin, & J. A. Beavo. The Structure of a Bovine Lung cGMP-binding, cGMP-specific Phosphodiesterase Deduced from a cDNA Clone. J. Biol. Chem., **268**, 22863 (1993).
215. D. R. Stover & K. A. Walsh. The Protein-Tyrosine Phosphatase Activity of CD45 is Activated by Sequential Phosphorylation by Two Kinases. Mol. Cell. Biol. **14**, 5523 (1994).
216. H. Ohguro, R. S. Johnson, L. H. Ericsson, K. A. Walsh, & K. Palczewski. Control of Rhodopsin Multiple Phosphorylation. Biochemistry **33**, 1023 (1994).
217. K. Palczewski, J. Buczylo, H. Ohguro, R. S. Annan, S. A. Carr, J. W. Crabb, M. W. Kaplan, R. S. Johnson, & K. A. Walsh. Characterization of a Truncated Form of Arrestin Isolated from Bovine Rod Outer Segments. Protein Science **3**, 314 (1994).
218. R. S. Johnson, H. Ohguro, K. Palczewski, J. B. Hurley, K. A. Walsh, & T. A. Neubert. Heterogeneous N-Acylation is a Tissue- and Species-specific Posttranslational Modification. J. Biol. Chem., **269**, 21067 (1994).
219. R. A. Resing, R. S. Johnson, K. A. Walsh. Mass Spectrometric Analysis of Twenty-one Phosphorylation Sites in the Internal Repeat of Rat Profilaggrin, Precursor of an Intermediate Filament Associated Protein. Biochemistry, **34**, 9477 (1995).
220. R. S. Johnson, K. A. Walsh. Mass Spectrometric Measurement of Protein Amide Hydrogen Exchange of Apo- and Holo-Myoglobin. Protein Science, **3**, 2411 (1994).
221. C. D. Thulin & K. A. Walsh. Identification of the Amino Terminal Peptide of N-terminally Blocked Proteins by Differential Deutero-Acetylation Using LC/MS Techniques. In Techniques in Protein Chemistry VI (ed. W. Crabb). Academic Press Inc. p. 55 (1995).

Kenneth A. Walsh

Page 21

222. K. Palczewski, I. Subbaraya, W. A. Gorczyca, B. S. Helekar, C. C. Ruiz, H. Ohguro, J. Huang, X. Zhao, J. W. Crabb, R. S. Johnson, K. A. Walsh, M. P. Gray-Keller, P. B. Detwiler, & W. Baehr. Molecular Cloning and Characterization of Retinal Photoreceptor Guanylyl Cyclase-Activating Protein. Neuron **13**, 1 (1994).
223. R.S. Johnson, D. Krylov and K. A. Walsh. Proton Mobility Within an Electrospray Peptide Ion. J. Mass Spectr., **30**, 386 (1995).
224. K. Fukuchi, D. D. Kunkel, B. Sopher, K. Kamino, N. Eriksen, C. E. Ogburn, A. C. Smith, C. E. Furlong, S. S. Deeb, D. Nochlin, P. A. Schwartzkroin, S. M. Sumi, K. A. Walsh, E. P. Benditt, G. M. Martin. Mouse Models for the Study of b-Amyloid Precursor Protein-Medicated Neurotoxicity. In The SAM Model of Senescence (ed. Toshio Takeda). Elsevier Science B.V. pp. 9-13 (1994).
225. H. Ohguro, K. Palczewski, K. A. Walsh and R. S. Johnson. Topographic Study of Arrestin Using Differential Chemical Modifications and Hydrogen/Deuterium Exchange. Protein Science, **3**, 2438 (1994).
226. C.D. Thulin, J.A. Taylor, and K.A. Walsh. Microheterogeneity of Human Filaggrin; Analysis of a Complex Peptide Mixture Using Mass Spectrometry. Protein Science, **5**, 1157 (1996).
227. C.D. Thulin and K.A. Walsh. Identification of the Amino Terminus of Human Filaggrin using Differential LC/MS Techniques; Implications for Profilaggrin Processing. Biochemistry, **34**, 8687 (1995).
228. H. Ohguro, M. Rudnick-Nawrot, J. Buczytko, X. Zhao, J.A. Taylor, K.A. Walsh and K. Palczewski. Structural and Enzymatic Aspects of Rhodopsin Phosphorylation. J. Biol. Chem. **271**, 5215 (1996).
229. J. Alex Taylor, K.A. Walsh, and Richard S. Johnson. Sherpa: A Macintosh-based Expert System for the Interpretation of Electrospray Ionization LC/MS and MS/MS data from Protein Digests. Rapid Commun. Mass Spectr., **10**, 679 (1996).
230. V. A. Florio, W. K. Sonnenburg, R. Johnson, K. S. Kwak, G. S. Jensen, K. A. Walsh, & J. A. Beavo. Phosphorylation of the 61-kDa Calmodulin-Stimulated Cyclic Nucleotide Phosphodiesterase at Serine 120 Reduces its Affinity for Calmodulin. Biochemistry, **33**, 8948 (1994).
231. Jeffrey A. Smith, Sharron H. Francis, Kenneth A. Walsh, Santosh Kumar, Jackie D. Corbin. Autophosphorylation of Type I $\beta$  cGMP-dependent protein kinase increase Basal Catalytic Activity and Enhances Allosteric Activation by cGMP or cAMP. J. Biol. Chem., **271**, 20756 (1996).
232. Jeffrey A. Kowalak and Kenneth A. Walsh.  $\beta$ -Methylthio-Aspartic Acid: Identification of a Novel Posttranslational Modification in Ribosomal Protein S12 from *Escherichia coli*. Protein Science, **5**, 1625 (1996).
233. S. H. Francis, J. A. Smith, J. L. Colbran, K. Grimes, K. A. Walsh, S. Kumar, & J. D. Corbin. Arginine 75 in the Pseudosubstrate Sequence of Type I $\beta$  cGMP-Dependent Protein Kinase is Critical for Autoinhibition, Although Autophosphorylated Serine-63 is Outside This Sequence. J. Biol. Chem., **271**, 20748 (1996).



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234. Thomas A. Neubert, Kenneth A. Walsh, James B. Hurley, and Richard S. Johnson. Monitoring Calcium-Induced Conformational Changes in Recoverin by Electrospray Mass Spectrometry. Protein Science, 6, 843 (1997).
235. Houle Wang, Kheng B. Lim, Ross F. Lawrence, William N. Howald, J. Alex Taylor, Lowell H. Ericsson, Kenneth A. Walsh, and Murray Hackett. Stability Enhancement for Peptide Analysis by Electrospray Using the Triple Quadrupole Mass Spectrometer. Analyt. Bioch., 250, 162 (1997).
236. John J. Lennon and Kenneth A. Walsh. Direct Sequence Analysis of Proteins by In-Source Fragmentation During Delayed Ion Extraction. Protein Science, 6, 2446 (1997).
237. John J. Lennon and Kenneth A. Walsh. Locating and Identifying Posttranslational Modifications by In-Source Decay During MALDI-TOF Mass Spectrometry. Protein Science, 8, 2487 (1999).